## REMARKS

Claims 1-18 are pending after entry of this paper. Claims 1-13 have been rejected. Claims 14-18 have been withdrawn. Applicants reserve the right to petition for rejoinder of withdrawn claims or to pursue withdrawn claims in a divisional application.

Claim 1 has been amended to recite the phrase "essentially completely bending the anode on both sides with respect to the center of the anode." Support can be found throughout the application as filed, for example, at page 3, lines 16-17.

Claim 1 has been further amended to recite the phrase "configured to alter the falling trajectory of the anode." Support can be found throughout the application as filed, for example, at page 2, lines 31-33.

No new matter has been introduced by these amendments. Reconsideration and withdrawal of the pending rejections in view of the above amendments and below remarks are respectfully requested.

Response to Rejections under 35 U.S.C. §103

Claims 1-6 and 9-13 have been rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over U.S. Patent No. 5,685,892 to Ikoma et al. ("the '892 patent"). Applicants specifically address the rejection to independent claim 1, and reserve the right to address each of the rejections to the dependent claims separately.

The Examiner contends that the claim element reciting a "'bend [*sic*] anode meets the surface of the melt … in an essentially horizontal position' is a combination result of anode bending, angle of chute-sloping channel, and arrangement of jump rail…" (Office Action, page

4) which are allegedly taught by the '892 patent. Applicants respectfully disagree with the Examiner's contention. However, in order to expedite prosecution without disclaimer of, or prejudice to, the subject matter recited in the instant specification, applicants have amended claim 1 to recite an "essentially completely bending the anode on both sides with respect to the center of the anode, configured to alter the trajectory of the anode…" Applicants assert that it is not merely a combination result which allows the anode to meet the surface of the melt in a horizontal position as argued by the Examiner. Rather, the bent anode of the instant application meets the surface of the melt due to its altered dropping trajectory. In contrast, the bent anodes of the '892 patent (1) are invariably bent at the leading end **only** and (2) only have an altered trajectory after the anode has entered the melt (*see* col. 8, lines 26-33). The '892 patent does not disclose or suggest a "bending element for essentially completely bending the anode on both sides with respect to the center of the anode" or "alter[ing] the trajectory of the anode" prior to reaching the melt as required by claim 1.

Also, the Examiner contends that "the bending angle/radius of curvature is a result-effective variable in term[s] of feeding result, which is evidenced by US '892 (Col. 8, lines 26-33 of US '892)" (Office Action, page 5). Applicants respectfully disagree with the Examiner's contention. As the Examiner is well aware, in order for a claim element to be considered a *result-effective variable*, optimization of the variable must achieve a recognized result (M.P.E.P. 2144.05(II)(B)). The '892 patent does not recognize (nor does it disclose or suggest) that bending an anode on both ends with respect to the center can alter the dropping trajectory of the anode prior to reaching the melt. Instead, the '892 patent discloses that "[t]he bending angle and length of the bent portion 1b of the anode scrap sheet 1 may change depending on the construction of the chute or the like …" (col. 8, lines 26-33) (emphasis added).

Thus, applicants assert that any result that could be achieved by modifying the bending angle/radius of curvature, according to the disclosure of the '892 patent, would be in response to the construction parameters of the apparatus. In contrast, the anode bending as recited by the instant claims, and supported by the original specification, is performed "to alter the falling trajectory of the anode such that the essentially completely bent anode meets the surface of a melt contained in the smelting reactor in an essentially horizontal position" (claim 1) and "the center of gravity is advantageously shifted, which further affects the dropping behavior of said anode" (specification as filed, page 6, lines 9-11). Thus, applicants assert that the bending of an anode according to the instant specification is not arrived at by optimization of a result-effective variable according to the disclosure of the cited reference, because the results of bending an anode are different from the instant invention and the '892 patent. Therefore, it is improper to contend that an "essentially bent anode" recited by instant claim 1 is the result of optimizing a known *result-effective variable*, since the disclosure of the '892 patent is limited to modifying the bending angle/radius of curvature to achieve compatibility with the construction parameters of the apparatus and does not teach bending an anode to optimize the dropping behavior of the anode based on shifting the center of gravity of the anode.

Furthermore, applicants assert that the anode bending, as instantly claimed, *performs a new function* (i.e., shifting the center of gravity of the anode) with new and unexpected results (i.e., modifying the falling trajectory of the anode) that are not disclosed or suggested in the '892 patent. In fact, the '892 patent is completely silent with respect to bent anodes having altered falling trajectories prior to meeting the surface of the melt in a horizontal position. Specifically, the trajectories of the bent anodes as disclosed in the '892 patent are not altered while falling towards the surface of the melt, but instead are only altered when:

> the bent leading end of the anode scrap sheet 1 reaches the melt in the converting furnace 10, the leading end tends to float in the melt due to the increased resistance exerted and changes its posture gradually from a vertical one to a horizontal one. Thus, the scrap sheet 1 is prevented from impinging against the furnace bottom." (col. 8, lns. 19-25) (emphasis added).

This is further illustrated in FIG. 9 of the '892 patent, where the anode scrap sheet 1 clearly does not meet the surface of the melt in an essentially horizontal position.

Applicants assert that the Examiner has impermissibly used hindsight to allege that the bending of the anodes to alter the falling trajectory would have been obvious to an artisan of ordinary skill in the art. The '892 patent does not teach or suggest altering the shape of the anode in order to adjust its center of gravity and thereby change the trajectory of an anode as it falls towards the surface of a melt. Applicants assert that only the instant specification (and not the cited reference) teaches an artisan of ordinary skill that bending the anode on both ends with respect to the center alters the center of gravity and ultimately the falling trajectory of the anode prior to meeting the surface of the melt.

The '892 patent does not teach or suggest all of the elements of the claims, particularly "a bending element for essentially completely bending the anode on both sides with respect to the center of the anode, configured to alter the falling trajectory of the anode such that the essentially completely bent anode meets the surface of a melt contained in the smelting reactor in an essentially horizontal position." Instead the '892 patent discloses a metallurgical furnace installation with only one "impingement-preventing" device per individual embodiment of a furnace installation where "the impingement-preventing device may comprise [either] a turning unit attached to the chute for turning the anode scrap . . . in a vertical plane, **or** may comprise a Rending [*sic*] press for the bending the leading end of the anode scrap" (emphasis

added, col. 2, lns. 12-16). The "turning unit" of the '892 patent causes an *unbent* anode to meet the surface of the melt in a horizontal position, (*see* col. 2, lns. 12-16 and col. 5, lns. 24-30). The "bending press" of the '892 patent requires an anode, *bent* only at the leading end, to meet the surface of the melt in a *vertical position* and "changes its posture gradually from a vertical one to a horizontal one" *only after it enters the melt* (*see* col. 8, lns 6-25 and FIG. 9). Therefore, in contrast to the Examiner's contention, since the turning unit and the bending press are never conjoined, the '892 patent does not disclose nor suggest **a bent anode** meeting the surface of a melt contained in the smelting reactor in an essentially **horizontal** position, as required by claim 1.

Thus, for the foregoing reasons, applicants respectfully submit that instant claim 1 is not obvious over the art of record. Reconsideration and withdrawal of the rejections of claims 1-6 and 9-13 under 35 U.S.C. §103(a) are respectfully requested.

Dependent claims 7 and 8 have been rejected under 35 U.S.C. §103(a) for allegedly being obvious over the '892 patent in view of U.S. Patent No. 4,578,977 ("the '977 patent") to Murakami et al. For the same reasons why independent claim 1 is neither anticipated by nor obvious over the cited art as described above, dependent claims 7 and 8 are also neither anticipated nor obvious. Applicants assert that the deficiencies of the '892 patent are not overcome by the '977 patent. Thus, applicants respectfully request reconsideration and withdrawal of the rejections of claims 7 and 8 under 35 U.S.C. §103(a).

Dependent Claims

Applicants have not independently addressed all of the rejections of the dependent claims. The applicants submit that for at least similar reasons as to why independent claim 1 from which all of the dependent claims 2-13 depend are believed allowable as discussed above, the dependent claims are also allowable. Applicants, however, reserve the right to address any individual rejections of the dependent claims and present independent bases for allowance for the dependent claims should such be necessary or appropriate.

## CONCLUSION

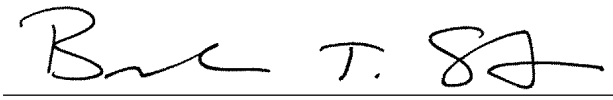
Based on the foregoing amendments and remarks, the applicants respectfully request reconsideration and withdrawal of the pending rejections and allowance of this application. The applicants respectfully submit that the instant application is in condition for allowance. Entry of the amendment and an action passing this case to issue is therefore respectfully requested. In the event that a telephone conference would facilitate examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided. Favorable action by the Examiner is earnestly solicited.

## AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. **13-4500**, Order No. 4819-4735.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. **13-4500**, Order No. 4819-4735.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: June 10, 2008 By: 

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